



April 13, 2012

Larry Giglio
New Mexico State Coordinator
NPDES Permits & Technical Branch (6WQ-PP)
USEPA Region 6
1445 Ross Avenue
Suite 1200
Dallas, TX 75202-2733

Re: NPDES Permit Application for Water Treatment Plant Discharge
Roca Honda Resources, LLC

Dear Mr. Giglio:

Roca Honda Resources, LLC (RHR) hereby submits the enclosed NDPES permit application for discharges from the water treatment plant at our Roca Honda mine project. Enclosed please find two (2) copies each of EPA Application Form 1 – General Information and Application Form 2D – New Sources and New Dischargers: Application for Permit to Discharge Process Wastewater, and two (2) electronic copies of the 60% Design Package for the water treatment plant for your use. By way of copies of this correspondence to the indicated distribution, RHR has also provided copies of Application Forms 1 and 2D to the New Mexico Environment Department (NMED), the New Mexico Mining and Minerals Division, the U.S. Forest Service, and the New Mexico State Land Office. An electronic copy of the 60% Design Package was also provided to Mr. Rich Powell at NMED.

Please contact me at 505 474-6696 or at jvelasquez@strathmoreminerals.com if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Juan R. Velasquez", is written over a horizontal line.

Juan R. Velasquez

cc: Rich Powell, NMED
Kurt Vollbrecht, NMED
David Clark, MMD
Diana Tafoya, USFS
Michael Mariano, SLO

Santa Fe, NM Office

4001 Office Court Dr., Ste. 102
Santa Fe, NM 87507
Phone: 505-474-6646
Fax: 505-474-6066

Grants, NM Office

423 W. Santa Fe, Ste. B
Grants, NM 87020
Phone: 505-428-6373

NM 2031119

02

United States
Environmental Protection
Agency

Office of
Enforcement
Washington, DC 20460

EPA Form 3510-1
Revised August 1990



Permits Division

Application Form 1 – General Information

Consolidated Permits Program

This form must be completed by all persons applying for a permit under EPA's Consolidated Permits Program. See the general instructions to Form 1 to determine which other application forms you will need.

FORM 1 GENERAL		U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION Consolidated Permits Program (Read the "General Instructions" before starting.)		I. EPA I.D. NUMBER NM0031119		T/A D	
LABEL ITEMS				GENERAL INSTRUCTIONS If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.			
II. POLLUTANT CHARACTERISTICS				INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.			
SPECIFIC QUESTIONS		Mark "X"		SPECIFIC QUESTIONS		Mark "X"	
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		YES	NO	B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		YES	NO
			X				X
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		YES	NO	D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		YES	NO
			X			X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		YES	NO	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		YES	NO
			X				X
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		YES	NO	H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		YES	NO
			X				X
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		YES	NO	J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		YES	NO
			X				X
III. NAME OF FACILITY							
1 SKIP Roca Honda Mine							
IV. FACILITY CONTACT							
A. NAME & TITLE (last, first, & title)				B. PHONE (area code & no.)			
2 DeJoia, John, Manager, Roca Honda Resources, LLC				(505) 474-6646			
V. FACILITY MAILING ADDRESS							
A. STREET OR P.O. BOX							
3 4001 Office Court, Suite 102							
B. CITY OR TOWN				C. STATE		D. ZIP CODE	
4 Santa Fe				NM		87507	
VI. FACILITY LOCATION							
A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER							
5 Sections 9, 10 and 16, T13N R8W							
B. COUNTY NAME							
McKinley							
C. CITY OR TOWN				D. STATE		E. ZIP CODE	
6 NA				NM		13	

VII. SIC CODES (4-digit, in order of priority)											
A. FIRST					B. SECOND						
C					(specify)	Uranium-Radium-Vanadium Ores	C			(specify)	
7	1	0	9	4			7				
15	16	-	19				15	16	-	19	
C. THIRD					D. FOURTH						
C					(specify)		C				(specify)
7							7				
15	16	-	19				15	16	-	19	

A. NAME										B. Is the name listed in Item VII-A also the owner?		
C												
8	Roca Honda Resources, LLC										<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
15	16										55 56	

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other," specify.)										D. PHONE (area code & no.)									
F = FEDERAL					M = PUBLIC (other than federal or state)					P (specify)					o				
S = STATE					O = OTHER (specify)										A (505) 474-6646				
P = PRIVATE										56					15 6 - 19 19 - 21 22 - 26				

E. STREET OR P.O. BOX	
4001 Office Court, Suite 102	

F. CITY OR TOWN																																								G. STATE				H. ZIP CODE				I. INDIAN LAND			
B Santa Fe																																								NM				87507				Is the facility located on Indian lands?			
																																																<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			

A. NPDES (Discharges to Surface Water)				D. PSD (Air Emissions from Proposed Sources)			
C	T	I		C	T	I	
9	N		Permit No. NM0031020	9	P		


15 16 17 18												30 15 16 17 18												30											
B. UIC (Underground Injection of Fluids)												E. OTHER (specify)																							
C T I												C T I												(specify)											
9 U												9																							

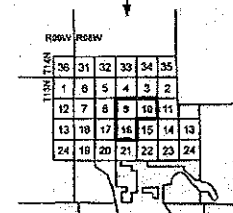
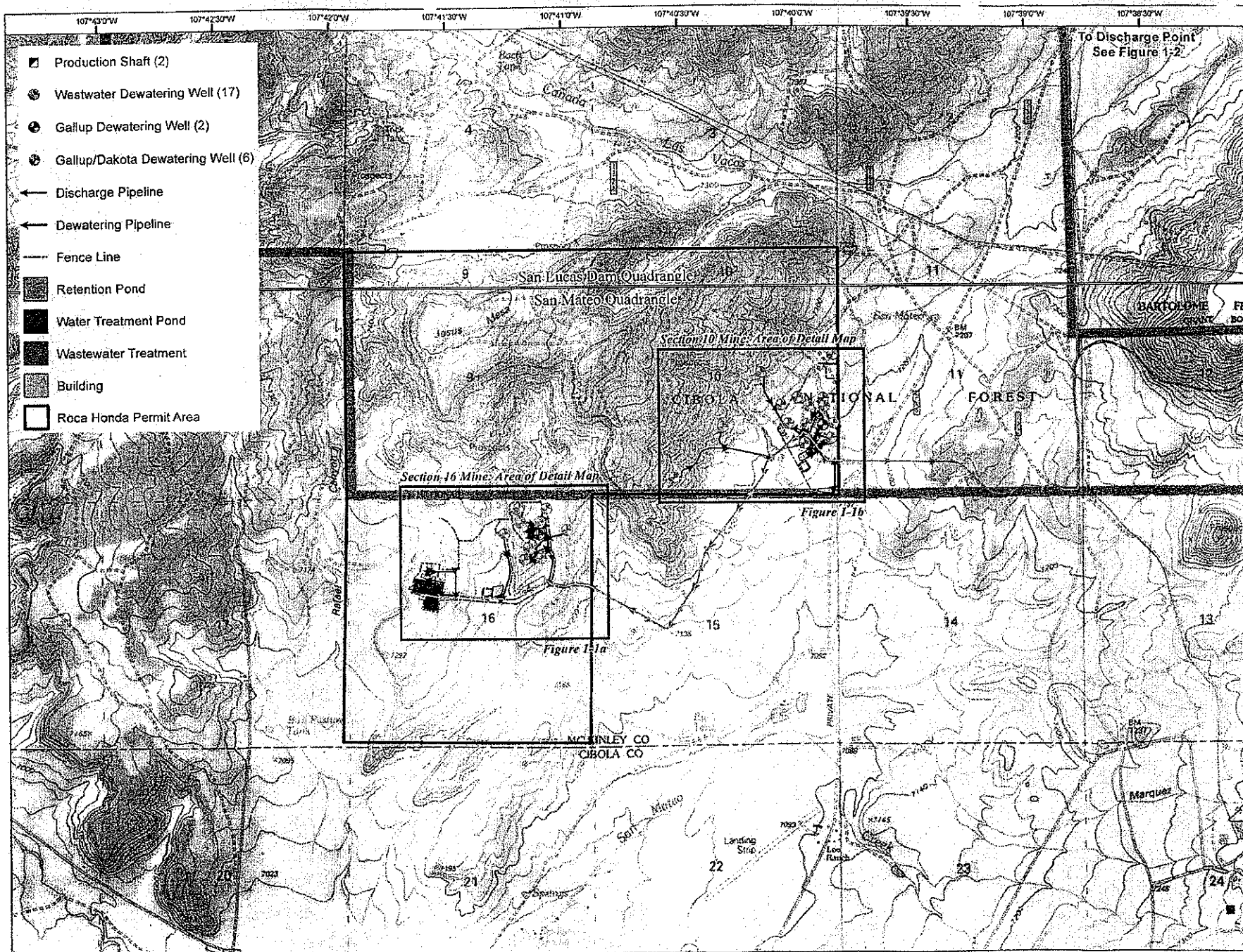
15 16 17 18				30 15 16 17 18				30							
C. RCRA (Hazardous Wastes)								E. OTHER (specify)							
C	T	I						C	T	I					
9	R							9			(specify)				
15 16 17 18				30 15 16 17 18				30							

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

Roca Honda Resources' business in McKinley County, NM, will be the operation of a conventional underground mine to extract uranium ore via vertical shafts. The shafts will be approximately 2,000 to 2,500 feet deep into the Morrison Formation, a water-bearing formation which contains the uranium ore. Water will be pumped from the mine and treated to remove uranium, radium and other constituents of concern to federal and state discharge limits. Under normal conditions, the water will be applied to pastures and will not be discharged. However, there may be circumstances in which the water will be discharged.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print) Mr. John DeJoia, Senior Vice- President, New Mexico Operations	B. SIGNATURE 	C. DATE SIGNED 4-12-12
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Red outline denotes permit area

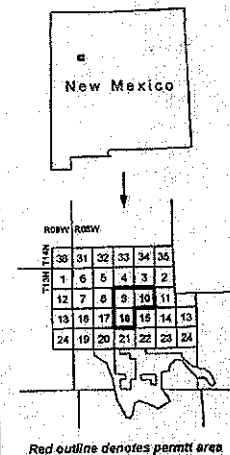
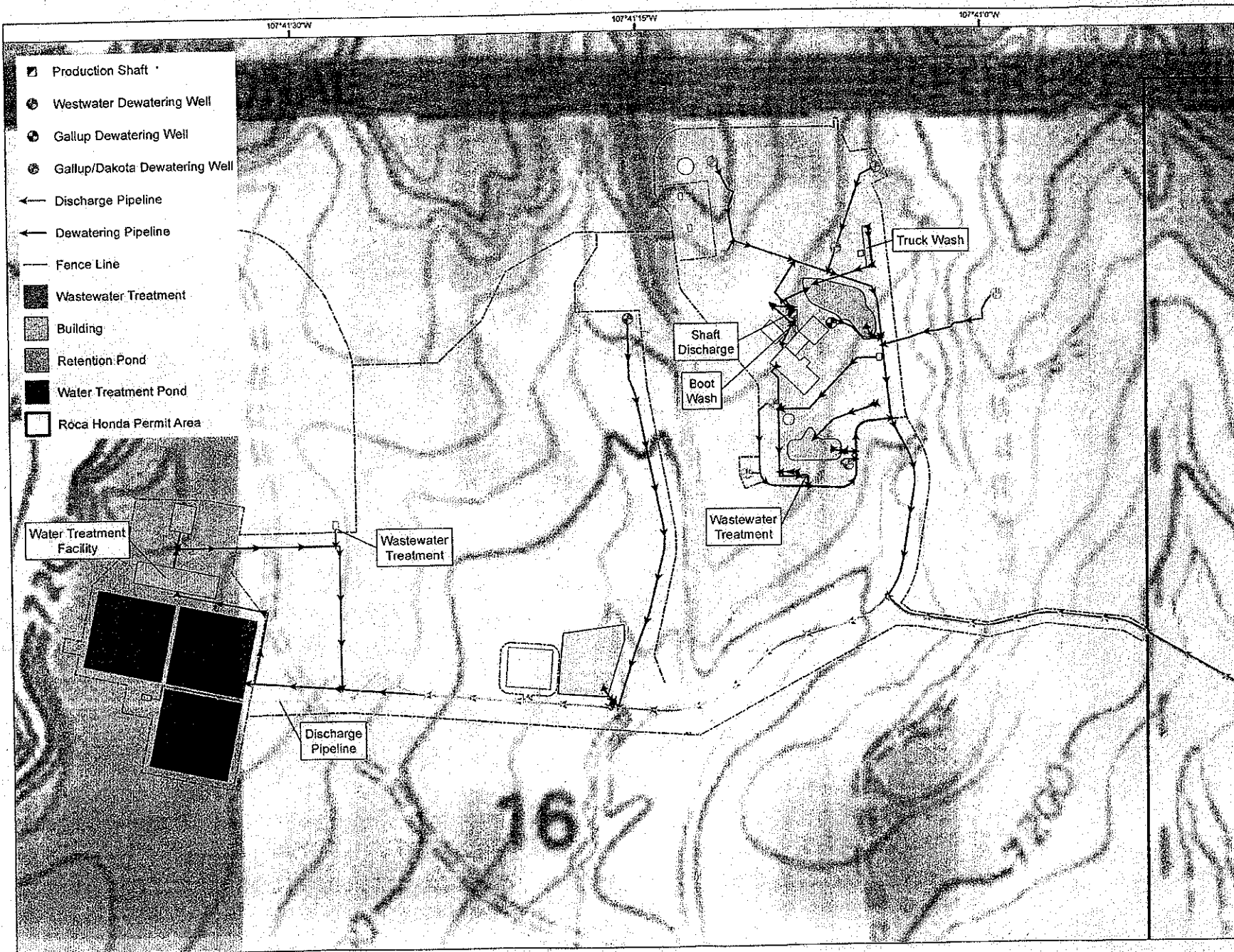
State Plane Coordinate System
New Mexico, Western Zone, US Foot
NAD 83

CONTOUR INTERVAL EQUALS 20 FEET

0 0.125 0.25 0.5 Kilometers

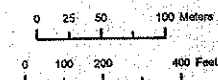
0 0.125 0.25 0.5 Miles

ROCA HONDA RESOURCES LLC: 4801 Office Court Dr. Ste. 102 Santa Fe, NM 87507		
NPDES FACILITY LAYOUT ROCA HONDA PROPERTY McKinley County, New Mexico		
Geology:	Drafting: D. Kapostay	Scale: 1:24,000
Figure 1-1		Date: 01.04.12

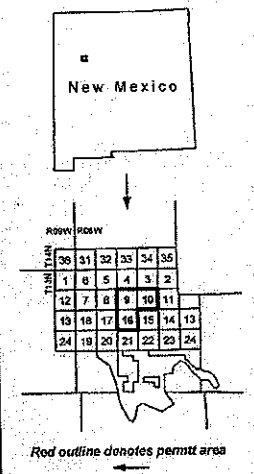
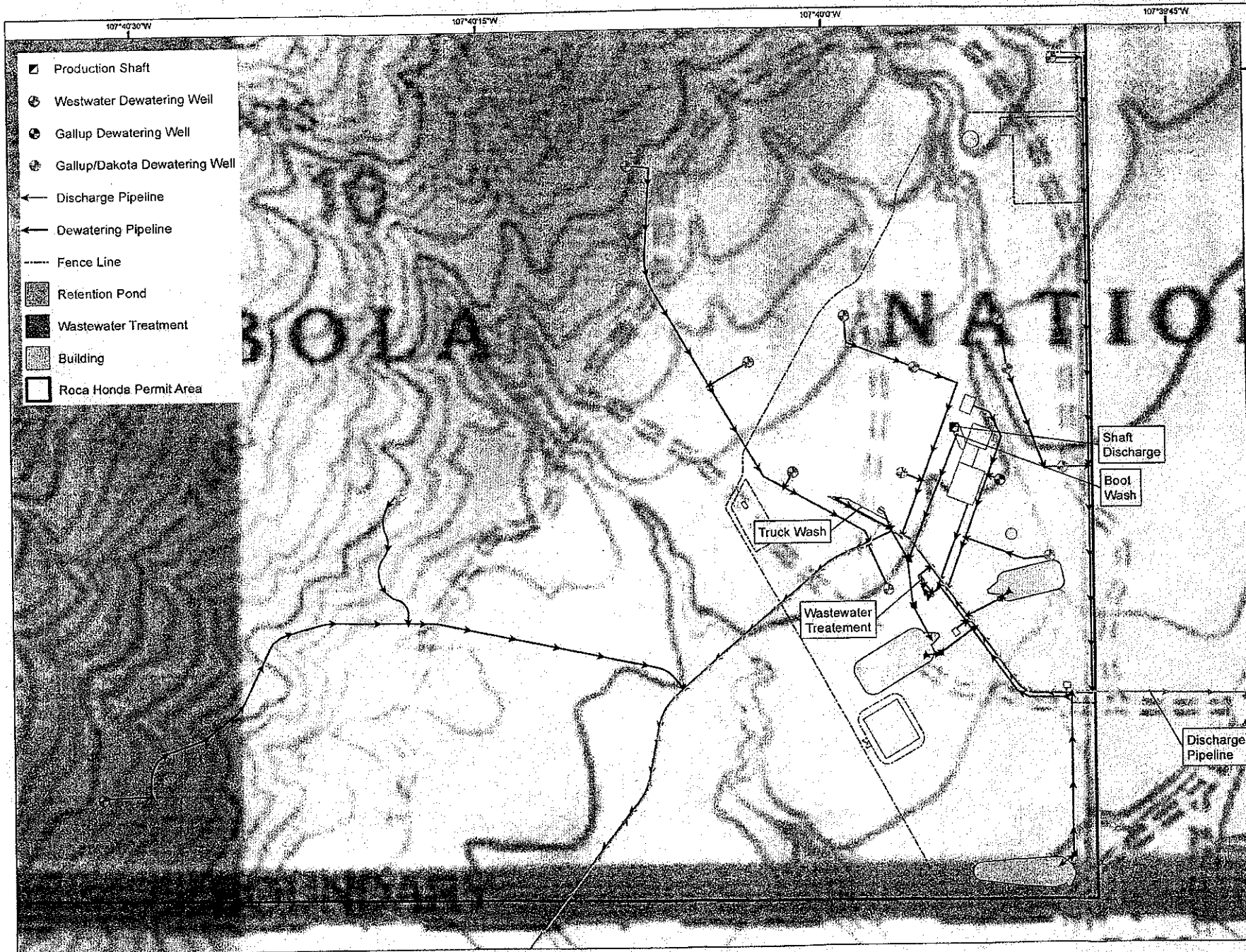


State Plane Coordinate System
New Mexico, Western Zone, US Foot
NAD 83

CONTOUR INTERVAL EQUALS 20 FEET

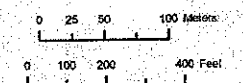


ROCA HONDA RESOURCES LLC. 4001 Office Court Dr. Ste. 102 Santa Fe, NM 87507		
NPDES FACILITY LAYOUT SEG 16 ROCA HONDA PROPERTY McKinley County, New Mexico		
Geology:	Drafting: D. Kapostasy	Scale: 1:4,000
Figure 1-1a		Date: 04.04.12



State Plane Coordinate System
New Mexico, Western Zone, US Foot
NAD 83

CONTOUR INTERVAL EQUALS 20 FEET

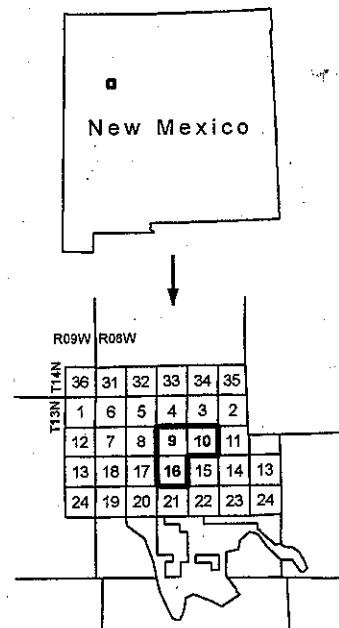
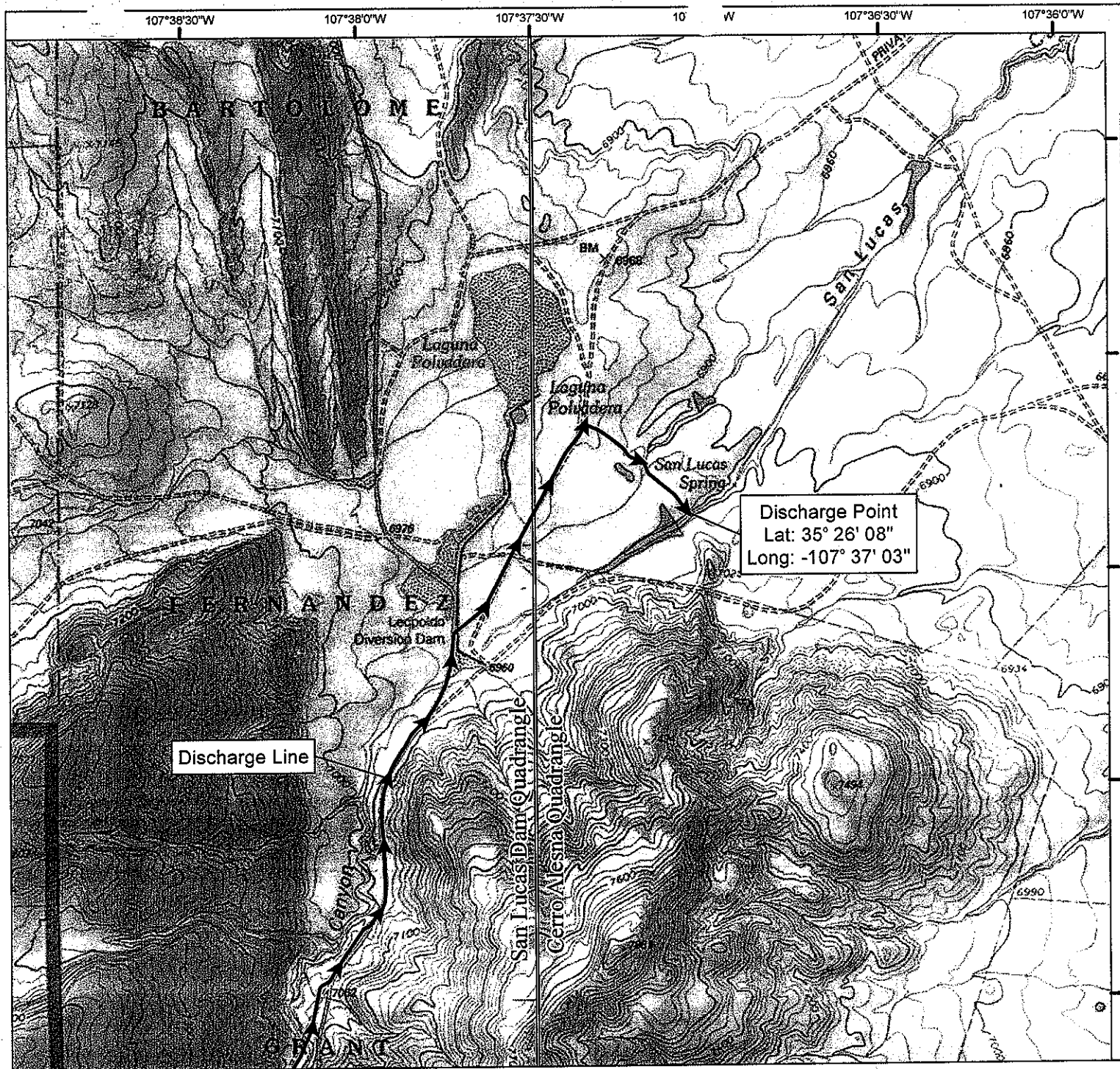


ROCA HONDA RESOURCES LLC:
4001 Office Court Dr, Ste. 102
Santa Fe, NM 87507

NPDES FACILITY LAYOUT SEC 10
ROCA HONDA PROPERTY
McKinley County, New Mexico

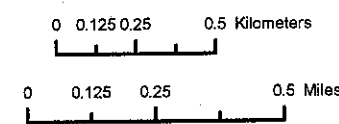
Geology:	Drafting:	Scale:
	D. Kapostary	1:4,000
Date:		04.04.12

Figure 1-1b



Red outline denotes permit area

State Plane Coordinate System
 New Mexico, Western Zone, US Foot
 NAD 83



ROCA HONDA RESOURCES LLC.
 4001 Office Court Dr. Ste. 102
 Santa Fe, NM 87507

NPDES DISCHARGE POINT
ROCA HONDA PROPERTY
 McKinley, New Mexico

Geology:	Drafting:	Scale:
	D. Kapostasy	1:24,000

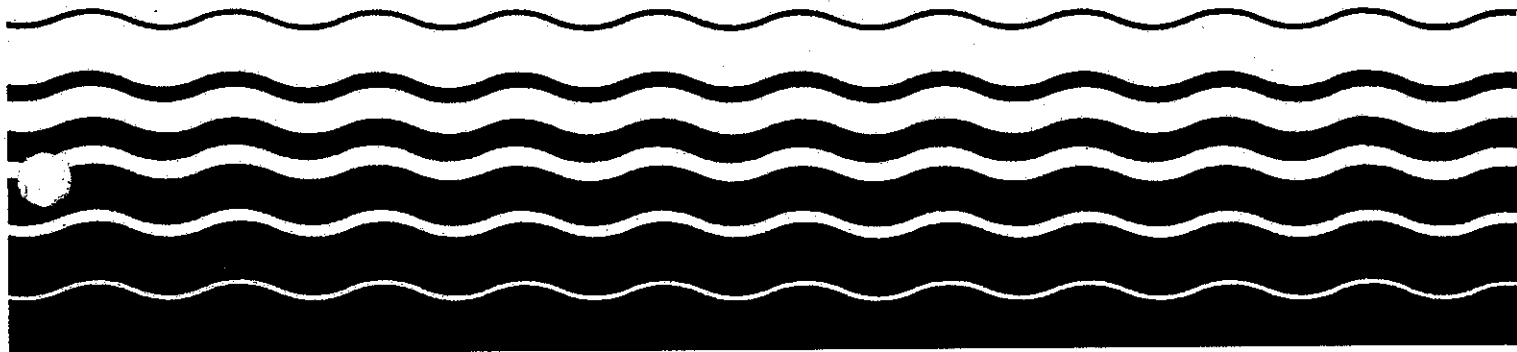
Figure 1-2	Date:
	04.04.12



Application Form 2D —

New Sources and New Dischargers:

Application for Permit to Discharge Process Wastewater



Please print or type in the unshaded areas only

EPA I.D. NUMBER (copy from Item 1 of Form 1)

Form
2D
NPDES



New Sources and New Dischargers

Application for Permit to Discharge Process Wastewater

I. Outfall Location

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

Outfall Number (list)	Latitude			Longitude			Receiving Water (name)
	Deg.	Min.	Sec.	Deg.	Min.	Sec.	
WTP-001	35.00	26.00	8.00	107.00	37.00	3.00	See Attachment 1.

II. Discharge Date (When do you expect to begin discharging?)

06/01/2013

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

[illegible]

CONTINUED FROM THE FRONT	EPA I.D. NUMBER (copy from Item 1 of Form 1)	Outfall Number WTF-001
--------------------------	--	---------------------------

V. Effluent Characteristics

A and B: These items require you to report estimated amounts (both concentration and mass) of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions (See table 2D-2 for Pollutants)

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value (include units)	3. Average Daily Value (include units)	4. Source (see instructions)
Group A			
Biochemical Oxygen Demand	Unknown	Unknown	Other
Chemical Oxygen Demand	Unknown	Unknown	Other
Total Organic Carbon	Unknown	Unknown	Other
Total Suspended Solids	Unknown	Unknown	Other
Flow	11.52 mcd 8,000 gpm	3.60 mcd 2,500 gpm	4
Ammonia (as N)	Unknown	Unknown	Other
Temperature (winter)	Unknown	Unknown	Other
Temperature (summer)	Unknown	Unknown	Other
pH	less than 9	6 - 9	4
Total Dissolved Solids	Unknown	Unknown	Other
Group B			
Fecal Coliform	Unknown	Unknown	Other
Fluoride	Unknown	Unknown	Other
Nitrate-Nitrite (as N)	Unknown	Unknown	Other
Oil and Grease	Unknown	Unknown	Other
Radioactivity			
(1) Alpha, Total	Unknown	Unknown	Other
(2) Beta, Total	Unknown	Unknown	Other
(3) Radium, Total	Unknown	Unknown	Other
(4) Radium 226, Total	Unknown	Unknown	Other
(5) Radium 226 + 228 (Diss)	Unknown	Unknown	Other

V. Effluent Characteristics (Continuation Table)

1. Pollutant	2. Maximum Daily Value (include units)	3. Average Daily Value (include units)	4. Source
Sulfate (as SO ₄)	Unknown	Unknown	Other
Aluminum, Total	Unknown	Unknown	Other
Barium, Total	Unknown	Unknown	Other
Boron, Total	Unknown	Unknown	Other
Cobalt, Total	Unknown	Unknown	Other
Iron, Total	Unknown	Unknown	Other
Molybdenum, Total	Unknown	Unknown	Other
Manganese, Total	Unknown	Unknown	Other
Section 1			Other
Arsenic, Total	Unknown	Unknown	Other
Cadmium, Total	Unknown	Unknown	Other
Chromium, Total	Unknown	Unknown	Other
Copper, Total	Unknown	Unknown	Other
Lead, Total	Unknown	Unknown	Other
Mercury, Total	Unknown	Unknown	Other
Nickel, Total	Unknown	Unknown	Other
Selenium, Total	Unknown	Unknown	Other
Silver, Total	Unknown	Unknown	Other
Zinc, Total	Unknown	Unknown	Other
Cyanide, Total	Unknown	Unknown	Other
Phenols, Total	Unknown	Unknown	Other
Chloride	Unknown	Unknown	Other
Group C			Other
Uranium, Total	Unknown	Unknown	Other
Vanadium, Total	Unknown	Unknown	Other

VII. Other Information (Optional)

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

VIII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

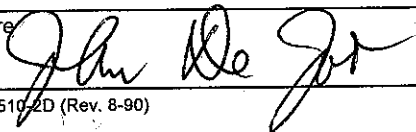
A. Name and Official Title (type or print)

John DeJoia, Senior Vice-President New Mexico Operations

B. Phone No.

(505) 474-6646

C. Signature



D. Date Signed

4-12-12

Attachment 1
NPDES Form 2D

I. Outfall Location

Receiving Water (name)

The treated water discharges on private land 8 miles NE of the Roca Honda Mine into Laguna Polvadera which is not a water of the United States subject to NPDES permit requirements (see Figure 1-2 attached to Form 1). Under normal operating conditions the water will be used for irrigation. However, in some instances the water may enter San Lucas Arroyo, and then to San Miguel Creek, then to Chico Arroyo, then to Rio Puerco, and then to Rio Grande, i.e., waters of the United States subject to NPDES requirements.

III. Flows, Sources of Pollution, and Treatment Technologies

A. Operations Contributing Flow and Sources of Pollution

This NPDES permit is required to discharge water produced and treated, as necessary, from dewatering the RHR mine. Surface facility and mine shaft construction will commence immediately after obtaining the required state and federal approvals.

- Dewatering wells and mine shaft water

The completion of the water treatment plant (WTP) construction will be coordinated with the installation of the initial dewatering wells around the Section 16 shaft. The WTP 60% Design for the Roca Honda Mine, Revision 1, dated December 2011 is submitted with this permit application. The approximate location of the wells is identified in Figures 1-1a and 1-1b attached to Form 1. These wells will be designed, permitted, and constructed in conformance with the New Mexico Office of the State Engineer (NM OSE). Prior to being cased and grouted, the wells will be logged to determine screened intervals and construction requirements. Roca Honda Resources (RHR) has submitted an application to dewater the Roca Honda mine to the NM OSE. The construction and operation of the mine will proceed in several phases. The timing and intensity of dewatering/depressurizing and the aquifers dewatered will also proceed in phases that reflect the physical development of the mine. Construction of the Section 16 mine shaft and initial mine development phase will take approximately three years.

During the first phase, the mine shaft will be constructed in Section 16 from the surface to approximately 2,100 feet underground. The shaft will pass through the following geologic units: the Crevasse Canyon Formation, the Gallup Sandstone, the Mancos Shale, the Dakota Sandstone, and the Westwater Canyon Member. The Gallup Sandstone, the Dakota Sandstone, and the Westwater Canyon Member will contain sufficient quantities of groundwater to require temporarily dewatering (depressurizing) them within a limited area around the shaft to facilitate its construction.

Dewatering will begin in advance of constructing the mine shaft. Four wells will be installed around the shaft location approximately 240 feet from the shaft to a depth of 900 feet and screened in the Gallup. These four wells will be pumped at a total projected maximum rate of up to 600 gallons per minute (gpm), i.e., 150 gpm each, for up to six months prior to the shaft construction reaching the top of the Gallup Sandstone. During

construction through the Gallup Sandstone, the wells will be pumped at a projected total rate of 600 gpm for approximately four months while the shaft is constructed through the Gallup.

After the shaft has been completed through the Gallup Sandstone, three of the Gallup wells will be deepened to a depth of approximately 1,860 feet and screened in the Dakota Sandstone. The fourth Gallup well will be retained and will be pumped at a rate of approximately 20 gpm for the life of the mine to prevent over-pressurization of the shaft and also used for domestic water supply. The three deepened wells will be pumped for approximately three months prior to the shaft reaching the top of the Dakota Sandstone at a rate of up to 250 gpm, i.e., 83 gpm each, in order to temporarily dewater/depressurize the formation in the area of the shaft prior to construction of the shaft through the Dakota. The wells will be pumped for an additional four months while the shaft is constructed through the Dakota. After the shaft has been completed through the Dakota, pumping will cease from the wells. They will be used, thereafter, to monitor water levels in the Dakota Sandstone.

Concurrent with the beginning of shaft construction and construction of wells into the Gallup Sandstone, six (6) wells will also be drilled to a depth of approximately 2,100 feet and screened in the Westwater Canyon Formation, i.e., the formation containing the ore. These wells will be constructed around the perimeter of the shaft location about 650 to 800 feet from the shaft. These wells will be pumped at a rate of up to 2,000 gpm, i.e., 333 gpm each for up to a year prior to shaft construction reaching the top of the Westwater Canyon Formation in order to depressurize/dewater the Westwater Canyon in the immediate area of the mine shaft.

The six wells and the shaft will be pumped at a rate of up to 2,000 gpm for up to six months while the shaft is constructed through the Westwater and initial mine development begins. After completion of the shaft through the Westwater Canyon Member, the wells will continue to be pumped for as long as they aid in dewatering the mine. However, as the mine development phase begins, it is anticipated that the shaft will function as the main point of production of water from the Westwater Canyon. The wells around the shaft will produce less and less water and eventually will no longer contribute to mine dewatering. At that point, most of the water being produced from the mine will be discharged through the shaft. The Westwater wells will be turned off but retained for emergency purposes and monitoring.

After the shaft has been completed, the underground mine development and operations phases within the Westwater Canyon Member will begin. During these phases, dewatering of the Westwater formation will be needed to facilitate continued mine development and operations over time and to ensure the safety of the miners during mining. Dewatering of the Westwater will continue throughout the life of the mine.

As the mine is developed over its mine life, as many as six additional wells will be constructed as needed into the Westwater Canyon Member along the course of the main underground workings. These wells will be installed in advance of underground construction and will be pumped so as to minimize inflow of groundwater into the mine workings.

In the long-term during the life of the mine, the shaft itself will become the major point from which water is produced. As the mine workings expand, the workings themselves will act as a gallery for gathering of the water within the mine. This water will be routed from the various working areas into a sump at the bottom of the shaft and pumped to the surface. The six wells along the underground workings will be pumped for as long as they provide an effective depressurization/dewatering mechanism. A total discharge of up to 4,500 gpm is anticipated from these wells and the Section 16 shaft.

The process of constructing wells in advance of shaft construction will be repeated for the construction of the Section 10 mine shaft. RHR anticipates that the rates and duration of depressurizing the Gallup and Dakota formation aquifers in Section 10 will be similar to those experienced during construction of the Section 16 mine shaft. However, the amount and rate required in the Westwater formation aquifer will likely be different in the Section 10 shaft construction because of the amount of pumping that will have occurred as the Section 16 mine development activities proceed toward the Section 10 shaft area. The amount of pumping required from the Westwater formation aquifer during shaft construction and subsequent mine operations is likely to be significantly less than 4,500 gpm. The true amount cannot be accurately assessed until such time as there is sufficient draw-down data available from the depressurizing activity described above. Nevertheless, for the purposes of design of the facilities, and therefore this Plan, it has been assumed that pumping rates from the Westwater Canyon formation when both shafts are operating will be a maximum of 8,000 gpm.

The water from the dewatering wells will be pumped to the WTP in a collection of 18 inch High Density Poly-Ethylene (HDPE) pipelines with fused joints. The water from the mine dewatering will be pumped to the WTP in a separate 18 inch HDPE pipeline. This configuration allows options for treatment within the treatment plant based on the influent quality. These pipelines will be monitored for change in pressure utilizing pressure gages throughout the system. In the unlikely event a leak occurred, a specifically designed leak proof saddle would be installed on the damaged area to seal the leak without a pump shutdown. A redundant plan would involve a system of piping and valves to switch the flow of water from one dewater pipeline to the other until the leaking portion of a line can be replaced.

- Site storm water runoff, boot wash, and truck wash from retention ponds

The retention ponds as identified in the Section 16 and Section 10 process areas and shown in Figures 1-1a and 1-1b of Form 1 will be excavated below grade with part of the excavation material used for the perimeter berms. The sizes and capacity of these ponds were determined as a result of the hydrologic analysis using a 100-year, 24-hour storm event. The ponds were placed downgradient from areas that could potentially collect constituents of concern that could otherwise be washed away with a storm event. The ponds will be lined, equipped with an inlet structure to collect solids for removal and disposal, and an outlet lift station to pump the water into the closest dewatering line to the WTP.

There will be three retention ponds in Section 16 and three in Section 10. The ponds are located next to the ore handling area, below the parking area, and below the non-ore stockpile. The drainage from the miner's boot wash area will discharge into a retention pond as will the drainage from the ore truck wash station. The lift station pumps will drain the retention ponds within a seventy-two hour period. The flow rate from the retention ponds will be minimal relative to the 2,500-4,500 gpm from the dewatering flow rate.

- Laboratories, restrooms, showers/sinks from wastewater treatment plants

Sanitary wastewater treatment facilities will be constructed in Section 16 and later in Section 10 to treat the toilet, sinks (to include laboratories), showers, and laundry wastewater (see Figures 1-1a and 1-1b attached to Form 1). The water will be collected in a series of buried septic tanks which are designed to treat approximately 10,000 gallons per day. The effluent from these tanks will be pumped into the nearest dewatering line and to the WTP.

These operational sources will result in an influent water to the treatment plant that is anticipated to contain the pollutants listed in Table 2D and Groups A, B, and C. Because the mine and WTP has not been constructed, no actual influent or treated water effluent exists. The anticipated influent water quality has been derived from historical data from mines in the area. Data considered was obtained from the following documents:

- RHR Baseline Data Report Revision 1, Section 9, Groundwater, Table 9-12 (2011)
- Johnny M Mine sample sites UG-4, UG-5, and UG-6 (1977)
- EIA Water Treatment Data UG-5 and UG-6 (1980)

Preference was given to the data from the Johnny M and Mt. Taylor mines due to their proximity to the Roca Honda mine site. Table 1 includes the mine water quality from these two mines, the anticipated Roca Honda mine water quality, and the New Mexico and EPA water quality standards. This anticipated Roca Honda mine water quality was used as the design basis for the WTP.

RHR will perform bench scale tests to confirm the treatment plant operating parameters and design criteria. The influent water will be "built" to simulate the anticipated quality. The resulting effluent will be analyzed to ensure the applicable federal and state quality standards are achieved. Therefore, the full-scale treatment plant discharged effluent will contain pollutants below the federal and state standards. The list of Group A, B, and C expected pollutants to be discharged are listed on EPA Form 2D under Item V. A., B., and C. RHR will measure and calculate the concentration and mass of the effluent characteristics.

Water Treatment Technologies

A water treatment plant will be constructed on Section 16 (see Figures 1-1 and 1-1a of Form 1) to collect and treat the mine operations wastewater from the permit area for discharge. This facility will consist of the water treatment process building, an influent

Table 1. Anticipated RHR Mine Influent Water Quality to Treatment¹

Constituent	Mt. Taylor 11/15/1979	Johnny M 11/7/1979	RHR Mine Anticipated Water Qual	Ground Water Standards
				NMQCC ² Human Health
As	0.007	0.044	0.04	0.1
Ba	0.149	0.212	0.22	1
Cd			<0.01	0.01
Cr			0.02	0.05
Cyanide			<0.02	0.2
Fluoride			0.08	1.6
Pb			0.008	0.05
Hg (total)			0.00178	0.002
Nitrate as N	0.25	0.36	1.5	10
Se	0.018	0.128	0.03	0.05
Ag			0.02	0.05
U	0.45	5.09	7	0.03
Gross alpha	990±50 pCi/l	1,700±100	1700 pCi/l	15 pCi/l
Ra-226+228	17±5 pCi/l	Not analyzed	178 pCi/l	30 pCi/l
				NMQCC Domestic Water
Chloride	11.9	8.53	12	250
Cu			<0.02	1
Fe			0.03	1
Mn			0.03	0.2
Phenols				0.005
Sulfate	251.9	188.5	250	600
TDS	696	753	750	1000
Zn	<0.25	<0.25	0.07	10
pH (s.u.)	9.02	7.85	8.5	6 to 9 su
				NMQCC Irrigation Use
Al			1.12	5
B			0.2	0.75
Co			0.02	0.05
Mo	0.13	0.612	0.62	1
Ni			0.02	0.2
				EPA NPDES³
TSS				30 daily max 20 mo. ave.
COD				200 daily max 100 mo. ave.
Zn	<0.25	<0.25	0.07	1.0 daily max 0.5 mo. ave.
Ra 226 (dissolved)				10 pCi/l daily max 3 pCi/l mo. ave.
Ra 226 (total)				30 pCi/l daily max 10pCi/l mo. ave.
U	0.45	5.09	7	4 daily max 2 mo. ave.
pH	9.02	7.85	8.5	6 to 9 - standard units

¹mg/l unless otherwise noted

²NMAC 20.6.2.3103, Ground and Surface Water Protection, Standards for Ground Water of 10,000 mg/l TDS Concentration or Less

³40 CFR 440, Protection of the Environment, Effluent Guidelines and Standards, Ore Mining and Dressing Point Source Category

surge pond and two treated water holding ponds. The effluent flow rate is expected to be 2,500 to 4,500 gpm. The maximum design capacity of the treatment facility is 8,000 gpm, which adds redundancy for most treatment units. Water generated from dewatering activities, water collected from within the Roca Honda permit area in the retention ponds and the effluent from the sanitary wastewater treatment system will be treated onsite at the water treatment facility.

The operations water discussed earlier in this application will be combined and pumped to the water treatment facility for treatment prior to disposal. The treatment process flow diagram and mass balance (three sheets) is included as part of this Attachment 1 under item III. B. The wastewater will be pumped into the plant via two parallel lines which separate the dewatering well water from the mine shaft water. The flows from the retention ponds and the sanitary treatment plants are included in one or both of these lines. The quality of the influent determines the flow path within the treatment plant. The influent may enter the surge pond if the flow is minimal, the barium chloride circuit, the ion exchange circuit, or directly to the discharge holding ponds. The surge pond has a retention capacity of 12 hours at 8,000 gpm.

The dual barium chloride circuit will have barium chloride and sulfuric acid added in the reaction tank(s). Radium will be precipitated and the solution will be pumped to the pressure leaf filters to separate solids from the water. A diatomaceous earth solution will be added to enhance solids removal. The solids will proceed to the filter press to remove the remaining water. The solids will be bagged for offsite disposal at a facility that has the required approvals to receive and dispose of such materials. The filtrate from the leaf filters will flow to the ion exchange columns or to the discharge ponds if the uranium is below permit limits.

A series of eight parallel ion exchange columns will be used to treat for removal of uranium. A selective high capacity PFA600 resin by Purolite will remove and bind the uranium. The water from the ion exchange columns will be sent to the treated water holding ponds and discharged in compliance with Federal and state requirements. The resins will be regenerated or disposed offsite. The treated water holding ponds are both sized to 12 hours of discharge at 8,000 gpm.

The WTP will contain a laboratory for monitoring the treatment performance. An off-site lab will also be used for complete effluent analyses. The WTP will be operated manually with automatic monitoring connected to the Programmable Logic Controller.

Treated water will be transported via a 20 inch welded steel pipeline as shown in Figures 1-1 and 1-2 attached to Form 1 to a location approximately eight miles northeast of the WTP. The water will, alternatively, either be picked up for reuse by the local rancher for irrigation prior to discharge into waters of the United States or discharged to the San Lucas Arroyo. The pipeline will be installed on the surface of the ground for ease of maintenance and inspection.

III.B. Line Drawing

The WTP 60% Design for the Roca Honda Mine, Revision 1, dated December 2011 is submitted with this permit application as a CD. The three sheets of the process flow diagrams have also been inserted to this Attachment 1. The intake water discussed in item III A above are shown in Figures 1-1, 1-1a, and 1-1b in Form 1. The sources of intake water enter the water treatment plant via the two lines titled as dewatering wells and mine water. Each treatment unit is identified on the flow diagrams and the mass balance is found in the lower left corner of the sheets. Further detail on the treatment processes and the operation and monitoring of the treatment plant is found in the design document. The treated water enters two discharge holding ponds and is then pumped into the discharge pipeline which flows approximately eight miles to the discharge point identified in Figure 1-2 attached to Form 1.

V. Effluent Characteristics

EPA Form 2D under Item V. lists the Group A, B and C pollutants that RHR anticipates may be discharged. The Section 1 priority pollutants that RHR anticipates may be discharged are also listed. RHR does not anticipate any of the Section 2 and 3 priority pollutants will be discharged. Daily Values are not listed because RHR has not started operation and does not have mine water to monitor.

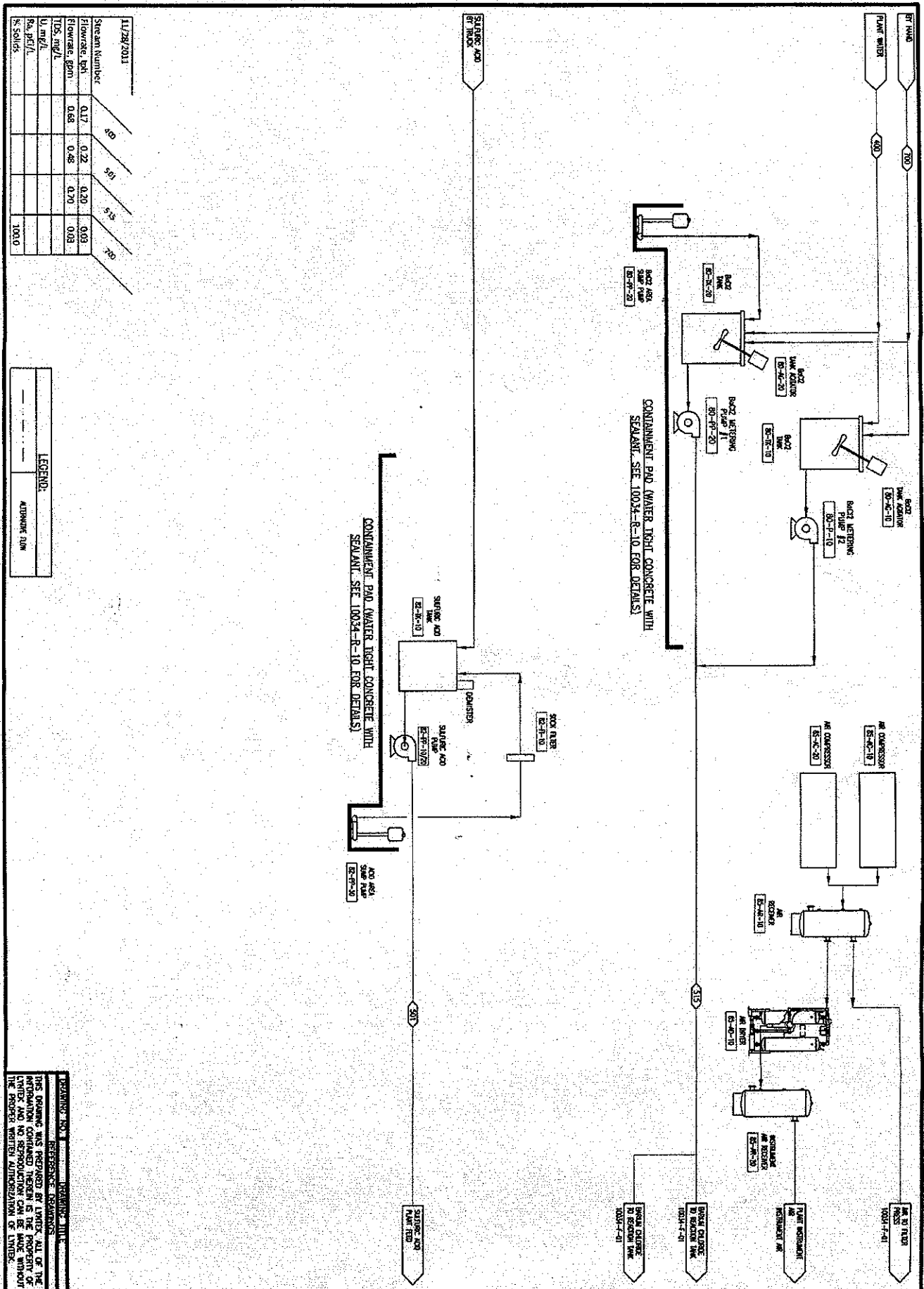
Determination of the possible presence of the pollutants listed is based primarily as a result of their presence in the intake water. However, some of the constituents, for example, barium will be present because barium chloride will be used in the treatment process. BOD, COD, TOC and fecal coliform may be present as a result of the domestic wastewater treatment process. Oil and grease may be present as a result of activities in the maintenance areas.

The constituents, uranium and vanadium from Table 2D-3 are listed because the ore that will be mined contains uranium and vanadium as does the water in the formation containing the ore. Also listed are several constituents not listed in Table 2D-2, i.e., Total Dissolved Solids (TDS), Radium 228, and Chloride. These constituents are listed because they are known to exist in the water and are of regulatory concern to the New Mexico Environment Department.

VI. Engineering Report on Wastewater Treatment

- B. Provide the name and location of any existing plant(s) which, to the best of your knowledge resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.**

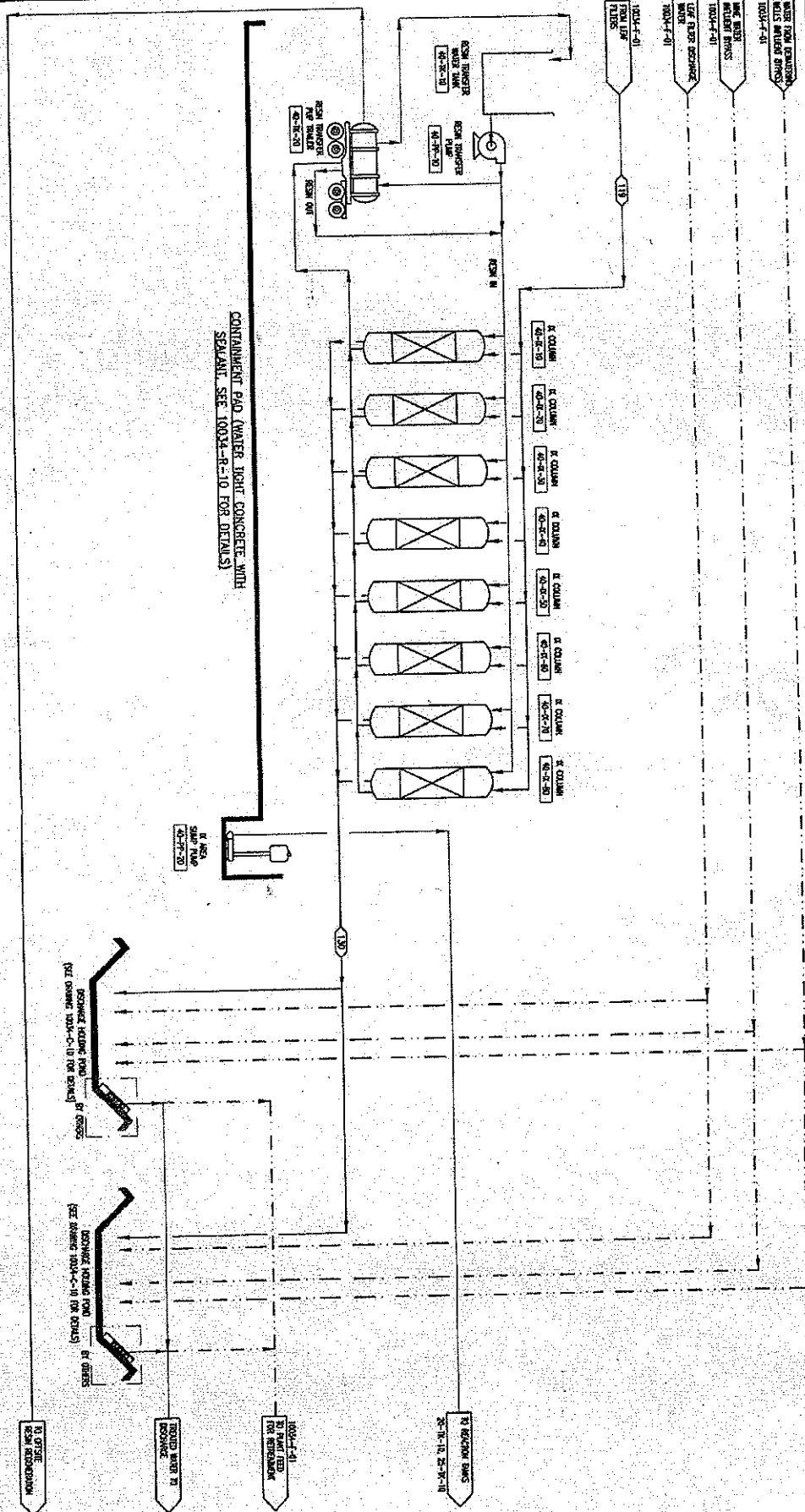
Name	Location
Rio Algom Mining, LLC NPDES Permit No. NM 0020532	Ambrosia Lake Mining Area McKinley County, New Mexico
Rio Grande Resources, Corp. NPDES Permit No. NM 0028100	Mt. Taylor Uranium Mine Cibola County/McKinley County, New Mexico
Resurrection Mining, LLC NPDES Permit No. NM 0028169	Rio Puerco Uranium Mine Sandoval County, New Mexico
United Nuclear Corp. NPDES Permit No. NM 0020401	Northeast Church Rock Mine McKinley County, New Mexico



REAGENTS 8000 GPM WTP 10034-F-03		PROJECT NAME STRATHMORE MINERALS ROCA HONDA MINES SECTION 16 MINE SITE DEVELOPMENT		60% SUBMITTAL NOT FOR CONSTRUCTION		LYNTEK INCORPORATED 1550 Dover St. Lakewood, CO 80216 Phone: (303) 623-6366		RMR Roca Honda Resources LLC 4001 Office Court Drive Suite 102 Santa Fe, NM 87507	
REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS	
REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	BY
E	12/21/11	ISSUED FOR REVISED 60%	DT						
D	12/12/11	SIGNED PEER REVIEW ON FILE	DT						
D	12/12/11	ISSUED FOR REVISED 60%	DT						
C	11/23/11	ISSUED FOR REVISED 60%	DT						
B	10/27/11	ISSUED FOR REVIEW	DT						
A	10/27/11	ISSUED FOR REVIEW	DT						

11/28/2011	ST	ST
Stream Number	1,001.8	1,001.8
Flowrate, lph	7,999.2	7,999.2
Flowrate, gpm	750.00	742.40
TDS, mg/L	750	0.00
U, mg/L	10	10
Ca, mg/L	10	10
% Solids		

LEGEND:	
ALTERNATE TON	



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PROJECT NO.	10034-F-02
ISSUING TITLE	ION EXCHANGE & RESIN TRANSFER
DATE	12/12/11
REV.	F
DESCRIPTION	8000 GPM WTP
DESIGNED BY	D.T.
CHECKED BY	R.E.L.
DATE	12/12/11
REV.	F
DESCRIPTION	8000 GPM WTP

STRATHMORE MINERALS
ROCCA HONDA MINES
SECTION 16 MINE
SITE DEVELOPMENT

ON SUBMITTAL
NOT FOR
CONSTRUCTION

LYNTEX
INCORPORATED

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Lafayette, CA 94501
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